

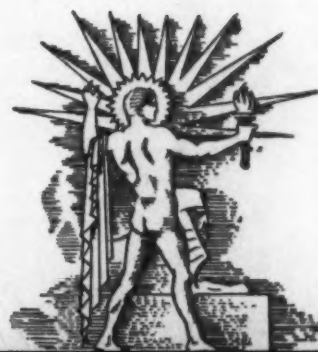
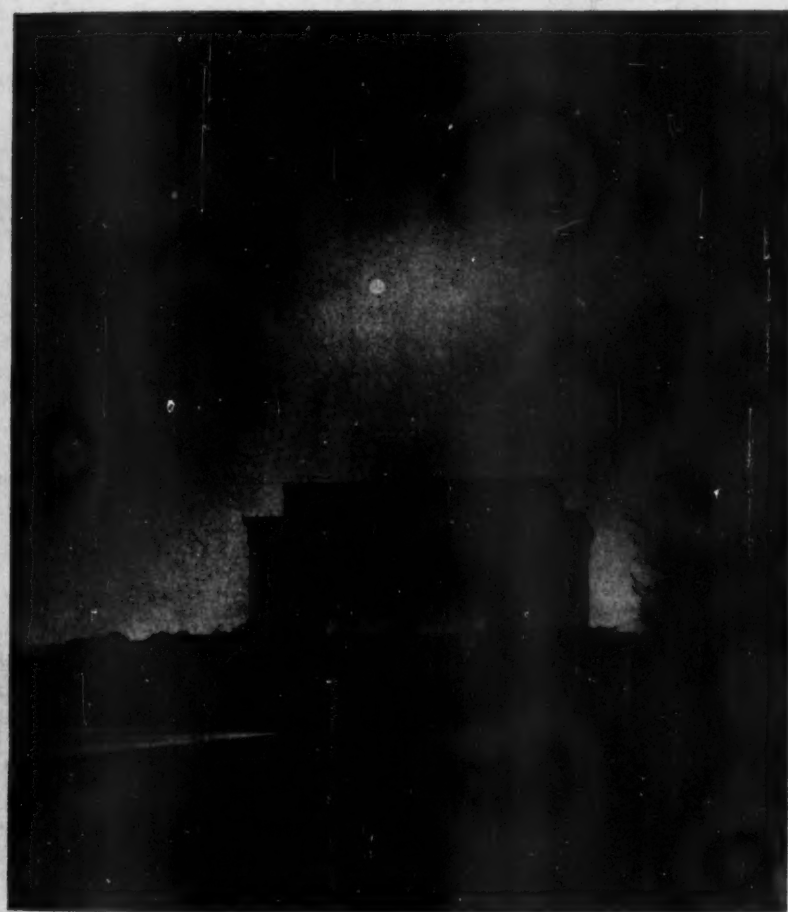
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SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE.



MARCH 30, 1935

Dust Over Washington
See Page 200

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DO YOU KNOW?

Twenty-five per cent. of the men in the mining industry in South Africa have tuberculosis.

Of the total weight of fish caught in the United States, 70 to 80 per cent. belong to six species.

There were marine turtles over ten feet long in North America's inland sea, 90 million years ago.

Cucumbers for pickling are usually black-spined varieties, whereas those for slicing are usually white-spined.

The Donner and Blitzen river in the Pacific Northwest flows through a region famous for its thunderstorms.

Oregon's famous P-Ranch, once the capital of a vast cattle empire, has been turned into a sanctuary for waterfowl.

Jackrabbits are now so abundant that they are a major menace to farm crops in the Great Plains and Mountain states.

Tall corn was grown by Indian farmers, for one French chronicler tells of getting lost more quickly in the corn fields of the Hurons than in the prairies and forests.

At the recent Zuni Indian fair, one event was an old man's marathon race, in which Zuni men over 50 years old displayed their speed and endurance.

British research shows that chilled beef can be held in good condition 60 to 70 days in an atmosphere containing 10 to 20 per cent. of carbon dioxide.

Skeletal remains of a Scottish bishop of the fifteenth century were recently studied to shed light on physical traits of Scots in that obscure period of history.

Says a Cornell garden note: a bird bath should not be too deep for the birds, not too near tall plants where cats might hide, and it should be firmly placed.

Cornell University diet experts say that a serving of food for a young child may be from two to eight level tablespoons, depending on the age and activity of the child.

Archaeologists examining the tomb in Athens erected to Spartan generals who fell in battle against the Thirty Tyrants, 403 B.C., found the skeletons intact, with weapons that caused death still in some of the bones.

WITH THE SCIENCES THIS WEEK

Most articles are based on communication to Science Service or papers before meetings, but where published sources are used they are referred to in the articles.

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ARCHAEOLOGY

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What is the active principle of ergot? p. 205.

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Is aspirin safe? p. 200.

Why are strychnine pills not safe for the home? p. 197.

PSYCHIATRY

What battle is waging in England? p. 205.

ANTHROPOLOGY

World's Oldest Cemetery Found in Palestine Caves

Stone Age Man Chiseled From the Rock of Caves
Almost a Foot Taller Than European of Same Time

THE WORLD'S oldest discovered burying ground is in caves of Mount Carmel, Palestine. Stone Age men, women and children more than fifty thousand years ago were laid to rest there with deliberate system and care.

That human beings so early buried their dead in a fixed manner—lying on their stomachs, arms folded with hands toward face, legs doubled up—has been learned by examination of skeletons removed from the cave-cemetery, Theodore D. McCown, American anthropologist, stated to Science Service.

"Whether or not the cave dwellers believed in after life," said Mr. McCown, "they recognized some ritual difference between the living and dead."

When discovered, the ancient skeletons were encased in limestone and breccia which hardened about them in their cave-cemetery. Blocks containing twelve of the earliest Palestinians were cut out and shipped to the Royal College of Surgeons in London, where Mr. McCown is drilling the bones out of their matrix.

Nine Inches Taller

The most complete skeleton that has so far emerged from the rock shows a Palestine man who stood almost a foot taller than his contemporaries in Europe. This skeleton, Mr. McCown explained, is five feet, ten inches tall, compared with an average of five feet, one inch, in Europeans of the time. The big Palestinian's legs were extremely long, adding at least two inches to his height.

Tall and impressive as he was, however, the Palestine man is not rated as a member of the race of modern man, *Homo sapiens*. Mr. McCown points to the beetling eye brow ridges and the low vaulted skull of the Palestine man, and calls him a kinsman of the ungainly, stooping Neandertal race of Europe. It is now believed that at least two different types of Neandertal men were living in the Old World, fifty to sev-

enty thousand years ago. Mr. McCown calls the Palestine type *Paleoanthropus Palestinus*, meaning Ancient Man of Palestine.

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ARCHAEOLOGY

Discover Bronze Age Chief In Great Oak Coffin

WITH an oak tree weighing well over a ton for his massive coffin, a warrior of 1000 B.C. has been discovered at the village of Fels, Denmark.

At the Danish National Museum, coffin and contents have just been examined by museum scientists who pronounce the discovery a relic of Denmark's Bronze Age. The oak tree coffin, because of its size and remarkable preservation, is of exceptional interest.

The oak, felled 3,000 years ago for funeral use, is practically as hard in its hollowed interior as though cut yesterday. From its 43-inch diameter, the tree was 700 to 1,000 years old when

cut. The coffin is over ten feet long and has been figured to weigh approximately 3,300 pounds.

To make the rounded box and lid, Bronze Age woodsmen split the trunk in equal halves, leaving the bark untouched. With flint or bronze axes they hollowed the log, and the two halves fitted together without fastenings.

To the disappointment of museum examiners, contents of the tree trunk coffin have not been preserved so well. Fissures in both ends of the coffin unfortunately admitted ground water, corroding the contents.

There remain a man's woolen cap of coarse weave, remnants of a cowhide in which the body was wrapped, the disintegrated skull, and what seems to be a cloak clasp consisting of a bronze ornament in the well-known Nordic scroll-shield design.

Fels, where the great oak was found, is a village on the southwest coast of Denmark, a port for steamers sailing for England.

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ARCHAEOLOGY

Stone Age Germans Had Their Beer

BAVARIAN honor, in the matter of beer, stands vindicated at last. No more can the alien lands of Babylonia and Egypt claim to be the birthplace of the great German beverage. Beer has flowed in Bavaria ever since the Stone Age. A recent archaeological discovery proves it.



A WARRIOR'S COFFIN

Bronze Age woodsmen hollowed out a 7-century-old tree to make this coffin weighing about 3,300 pounds for an honored chief.

Dr. Ernst Frickhinger, director of the Museum of Prehistory in Nördlingen, not long ago dug up some broken pottery vessels at the site of a New Stone Age village in southern Germany. In one of them was a dark, glistening mass that appeared to be of organic nature. Dr. Frickhinger submitted a sample to the noted Berlin microscopist, Dr.

Johannes Grüss, who identified it as the remains of the special kind of bread used as the starting-point of the brewing process by all ancient peoples who knew how to make beer at all.

This find constitutes the first evidence that any people of the Late Stone Age drank beer.

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GENETICS

300 Generations Descended From One Pair of Insects

THREE hundred successive generations of descendants of one individual have been reared during the past fifteen years in the laboratories of the Johns Hopkins University. This constitutes the longest single breeding experiment ever carried out, so far as known, Prof. Raymond Pearl, noted Johns Hopkins biologist, stated in announcing its result to the Washington Academy of Sciences. Translated into terms of human generations, it would carry us back to 7,000 B.C., at the dimmest twilight beginnings of the Bronze Age and before the dawn of history.

Crowding 300 generations of a living organism into half a human generation of time was made possible by the use of the little gnat-sized insect *Drosophila*, known variously as fruit-fly and yeast-fly. Its life-cycle can be completed in three weeks, instead of the human thirty years.

The experiment consisted in starting with a single normal male, mated to a female with vestigial wings. Normal males were selected from each hybrid generation, and always bred back to vestigial-winged mates. In the end, the "genes," or hereditary units determining normalcy in wings, were still there, striking evidence of the permanence and persistency of these factors in the reproductive process.

Longer Persistence

Prof. Pearl then called attention to far longer persistence in hereditary patterns of other organisms in nature. Some of the lower forms of animal life have come down unchanged through tens of millions of years.

Yet for all this demonstration of potency on the part of the hereditary units, the speaker cautioned against too easy

acceptance of doctrines ascribing all importance to heredity as against environment in human affairs.

"The full implications of the reciprocally determinative influences of organism and environment seem to me to have been generally somewhat less than adequately valued in the last century's development of biological thought," he said, "and certainly an extremely inadequate amount of first-rate research has been put upon the matter."

Nor was he willing to subscribe to the doctrine that birth control, in limiting the reproduction of the "upper classes" while the poor continue to breed, is "ruining the race." Making it plain that he supports the idea of birth control, and especially that he believes in checking the increase of the hereditarily defective, Prof. Pearl declared:

Why are They Superior?

"It is assumed that generally speaking and with negligible exceptions the more fortunate social and economic classes are in that position because they are composed of not only mentally, morally, and physically, but also genetically superior people. But it may be alleged with at least equal truth that these very people who are regarded as mentally, morally and physically superior are that way in no small part only because they and their forebears have been fortunate socially and economically.

"The analogy often drawn between human breeding and livestock breeding is in part specious and misleading. In animal breeding it has been learned that the only reliable measure of genetic superiority is the progeny test—the test of the quality of the offspring actually produced. Breeding in the light of this test may, and often does, lead to the

rapid, sure, and permanent improvement of a strain of livestock.

"But when the results of human breeding are interpreted in the light of the clear principles of the progeny test the eugenic case fares badly. The vast majority of the most superior people in the world's history have in fact been produced by mediocre or inferior forebears; and conversely the admittedly most superior folk have in the main been singularly unfortunate in their progeny.

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ETHNOLOGY

Iroquois Indians Had Code for Murderers

RULE number one for murderers: The slayer positively must stay beside his victim until discovered.

It sounds nonsensical, certainly. In this day and age, a murderer defies all laws, takes any chances, saves his skin by any wild maneuver he can think of.

Nevertheless, there used to be rules for murder in America. Iroquois Indians in the Great Lakes country and New York State had strict ones, so an ethnologist has discovered. What is more, an Indian murderer kept the rules, if he knew what was best for him.

How crime has changed in America is vividly shown by these Iroquois ideas on murder, reconstructed by J. N. B. Hewitt of the Bureau of American Ethnology, who has long studied the social organization of these Indians.

An Iroquois murderer, Mr. Hewitt finds, would steel himself to stay right beside the body until some one came along and found him—even if he waited a week in that gruesome company. His hope was that whoever discovered him would take him into custody without violence. Then, his kin would pay an agreed amount of wampum to the bereaved relatives. After financial settlement, the murder would blow over and be forgotten.

The murderer tensely waiting beside his victim knew, however, that there could be another outcome, far less pleasant. If he was found first by a relative of his victim, the enraged relative could slay him on the spot. That was right and proper, according to murder rules, and no weapons were barred.

But, of course, if the avenger slew the murderer then he, in turn, became a murderer. He must stay there beside the two bodies awaiting apprehension.

That could go on indefinitely, it might seem, until a string of victims accumulated.

In actual life, it seems that the Indian sentiment was to avoid needless piling up of tragedy. Honor of the family was generally saved by taking wampum rather than blood.

Escape, the first thought of murderers in the white man's America, seems to have been the last resort of the Iroquois killer. He had little hope of casting suspicion on the wrong man, and still less hope that mystery would swallow up the situation. In so small and closely organized a society as the

Iroquois Indian world, personal grudges and hates were too much public property for murder crimes to remain unsolved.

There was no way for the Indian slayer to brazen it out. Escape meant fleeing to another tribe, asking refuge. If they needed warriors badly they might take him in; otherwise they would add his scalp to their collection. Or, he could vanish into the wilderness to become an outcast, there to starve, or to wander hermit-like until some Indian came along and dispatched him. Killing strangers was permitted, by the crime code in those days.

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MEDICINE

Convalescent Serum, Hygiene Preventives of Measles

WITH measles on the rampage and new cases being reported at the rate of over 30,000 a week, particular interest attaches to the latest reports on how the disease spreads and on results obtained with convalescent serum as a preventive measure.

Preventive serums have captured the popular fancy, perhaps because of their appearance of magic. A prick of a needle, a "shot in the arm," and presto! your body is endowed with a mysterious, invisible power that protects you against diphtheria or typhoid or some other dreaded malady.

In the case of measles, convalescent serum from the blood of recently recovered measles patients seems to give a fair measure of protection. Equally important, however, are less dramatic hygienic measures.

Measles spreads more rapidly in congested districts and in homes where the hygiene is poor, two New York physicians, Drs. Samuel Karelitz and Bela Shick, the latter of diphtheria test fame, have just reported (*American Medical Association Journal*, Mar. 23). They class as homes of good hygiene those in which the sick child is isolated from other children at an early stage of the disease.

A study was made by these physicians of 106 children who had been exposed to measles. All had been exposed to the disease for from two to five days. All were given convalescent serum in the same amounts. The serum gave no protection to the children who lived in

homes where the hygiene was poor. It protected over half of the children in homes where good hygiene prevailed. Eighty-three per cent. of children who were in hospitals were protected. Children coming from careless homes must be given much larger doses of measles convalescent serum if they are to escape the disease.

These child specialists also report that the degree and frequency of in-

fection with measles, within a period of a few days, determines in large measure whether the disease will develop in the susceptible children. In this respect, measles is like tuberculosis.

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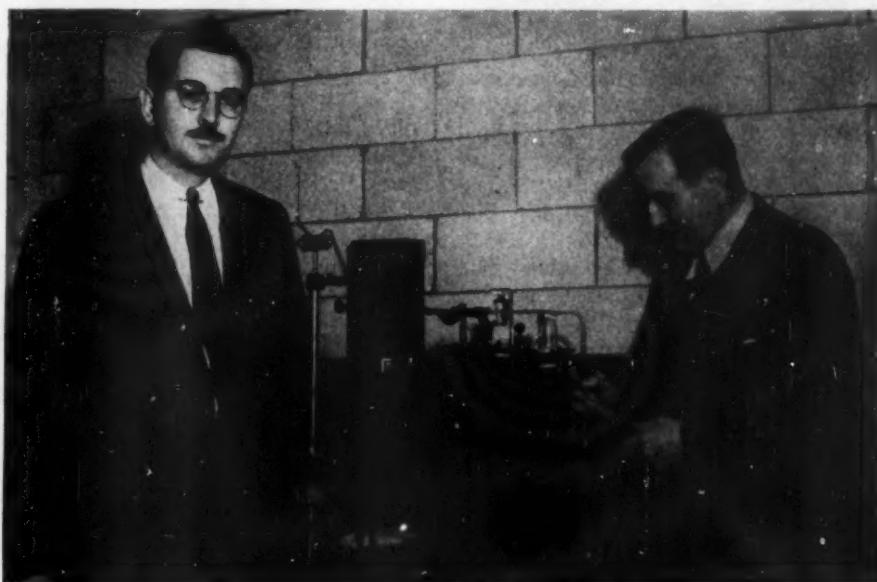
PHARMACOLOGY

Candy Pills Not For Children

NO ONE in his right mind, of course, would think of letting three-year-old Susie eat her fill of chocolate-coated or pink candy laxative pills. Mother keeps them on the top shelf of the family medicine chest and the manufacturing pharmacist may even label them Not For Children.

Susie, however, cannot read the label and she has a way of getting her hands on things not meant for her and, unfortunately, of putting them into her mouth. When they happen to be laxative pills, the results are too often tragic.

These pills generally contain strychnine, a poisonous substance. The amount of strychnine in each pill is not very great—1/120 grain—not enough to hurt an adult. One of them might not hurt a child either, but the danger is that the child who gets at them unobserved does not stop with one. Children have been known to eat as many as 80 to 90 of these pills. (Turn to page 198)



RARE WATER

In the tube which Prof. Hugh S. Taylor (right) is indicating with his pipe are ten drops of water very rich in triple weight hydrogen. The apparatus shown was used to produce these precious drops from 75 tons of ordinary drinking water. At the left is Dr. Pierce W. Selwood who did the research under the direction of Prof. Taylor, at Frick Chemical Laboratory, Princeton. (See SNL, March 23)

Largely as a result of such happenings, some six hundred children under five years of age died in the United States during a three-year period. Census reports make the figure a little less than this, but other reports indicate that it may be higher. In Canada, official statistics show 52 such deaths in a three-year period.

In an age peculiarly devoted to protection of children, it would seem that this wholly avoidable loss of children's lives could be prevented. Besides greater watchfulness on the part of parents, doctors advise more specific remedies for the situation.

Entire removal of strychnine from the formulas of these laxative tablets is one measure recommended by two Toronto physicians, Drs. John R. Ross and Alan Brown, who report to the Canadian Medical Association the extent of this

menace to small children. The same suggestion has been made by physicians in the United States.

Laws requiring a "Poison" label on medicines containing strychnine were recommended both by the Canadian Medical Association and the Canadian Pharmaceutical Association.

Physicians themselves are taken to task for their share in the present situation by the editor of the Canadian Medical Association's Journal. (March) Doctors have been too ready to consider these tablets harmless, the editor says. Furthermore, patients have drifted into the habit of taking these tablets because doctors have not taken the trouble to prescribe suitable treatment leading to permanent relief of the condition for which the candy pills are taken.

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ARCHAEOLOGY

Robinson Crusoe's Isle Made National Park by Chile

ROBINSON CRUSOE'S famous isle in the Pacific has been declared a national park by the Chilean government. (*Nature*, Feb. 23)

That probably means a greater wave of public interest in one of the world's romantic islands. More tourists will cruise out on steamers to see what a proper island for castaway adventures should look like. Larger crowds will inspect the scenes where the original lonely Crusoe—Scottish mariner Alexander Selkirk—built his shelter, hunted goats, and watched for the ship that would rescue him.

Meanwhile, Chilean decree has also given national park status to another famous Pacific "sight," Easter Island, where an outdoor art gallery of great stone faces has long puzzled seafarers and scientists.

But this second newly created island park will probably have fewer tourists—souvenir hunting ones, certainly—for the Chilean government's aim is to protect Easter Island, not to make it more popular. The impressive sight of hundreds of stone portrait figures on the island hillsides has been endangered at times by persons damaging or carrying off statues, and other relics as well. Easter Island lies 2,000 miles west of Chile and over 1,000 miles from its

nearest island neighbors. But that long haul over which any prize piece of the island's heavy art must be carried in order to get it anywhere has not always deterred collectors.

With stronger government supervision of Easter Island and its antiquities, science can take renewed interest in clearing up the mysteries of the "loneliest inhabited island in the Pacific." Two scientific expeditions had already made the island their goal this season, in the hope of solving the riddle of the great stone faces. (*See SNL*, Nov. 17, 1934).

It is conceded that natives carved the figures, some of which weigh full 40 tons. Natives pushed and slid the stone giants from the quarry down the hillsides.

But that does not explain enough. Science wants to know whether the stone faces represented gods or native residents, and why they were carved at all, and why some were little fellows in stone, and others towered over 30 feet high. Science wants to know why the statue-making stopped abruptly, as it did one day with an unfinished masterpiece still at the quarry.

Besides the statues, unique in Pacific art, Easter Island had another ancient and mysterious distinction. Its people

could read and write, and in all Polynesia they were the only islanders who could.

Attempts to read the writing have given only partial success. And students of man's history want almost even more to learn whether natives on Easter Island made that great invention of a writing system for themselves, or whether they brought or borrowed the invention from somewhere else.

Where Did it Come From?

Most important of all, scientifically, if the Easter Islanders did import their writing system, from what direction did they get it? It is of great historic interest to know whether a people so remarkable was linked culturally to Indian civilizations of South America or to some Asiatic homeland.

Easter Island, now a Chilean sheep ranch, is on no beaten tourist cruise track, and is not likely to be. One supply ship a year, private yachts, and occasional wandering ships touch on the shores of this world famous island.

Crusoe's Island, Juan Fernandez, on the other hand, is distinctly tourist conscious. Two volcanic islands, less than 500 miles from Chile, compose jointly what is known as Juan Fernandez. Both are included in the park designation, and both have natural features of interest, but it is Crusoe's particular island that attracts the public.

Memorial Tablet

There has long been a memorial tablet where Selkirk watched day after day through his four years of solitude, waiting for the ship that finally did arrive to rescue him. The tourist steamer is always met by a Crusoe costumed in goat skins and attended by Man Friday. Visitors find that, as castaway islands go, this island has much to recommend it. There are beautiful forest scenes, great ferns, streams, and wild life, including gamey fish and the famous wild goats that Selkirk hunted for food and clothing.

Selkirk and Crusoe blend inextricably into one on Juan Fernandez. Daniel Defoe, who is generally supposed to have based his story on Selkirk's experiences, chose to say that his hero Robinson Crusoe was cast off on an island in the Orinoco River in South America, but that discrepancy in geography never seriously worries Juan Fernandez sightseers. The shift in geographic location was a mere fictional touch. Selkirk-Crusoe is real, and his island proves it.

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NOW A NATIONAL PARK

The wilderness island where the original Robinson Crusoe, Alexander Selkirk, spent four lonely years has now been made a national park by the Chilean government as has also Easter Island, famous for its mysterious great stone faces. Above is Robinson Crusoe and his isle as depicted by an engraving in an old book on "Crusonia."

MEDICINE

Olive Oil Injections Aid In Treating Pneumonia

SUCCESS in treatment of pneumonia with olive oil has just been announced by Drs. A. C. Frazer and V. G. Walsh of St. Mary's Hospital Medical School in London.

The oil is emulsified and then injected into the veins. The high temperature of pneumonia patients dropped to normal within twenty-four hours after the oil injection and three weeks later the patients were well.

Patients suffering from septicaemia, commonly known as blood poisoning, and from erysipelas and acute rheumatism also improved after the olive oil treatment.

The emulsified olive oil injections also seem to prevent the reactions which frequently follow injection of vaccines, tuberculin and insulin, making possible the use of much larger doses of these substances.

The remarkable effect of the olive oil is considered due to absorption of the pneumonia or other toxins circulating in the blood. These poisons lose their potency after adhering to the globules of the oil.

Drs. Frazer and Walsh first conducted test tube experiments with emulsified olive oil and the toxins of the diphtheria germ and tetanus or lockjaw. Then they investigated the effect of the olive oil on animals infected with these germs. Finally it was tried, with success, on patients.

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ARCHAEOLOGY

Revolution Does Not Stop Archaeologists' Digging

REVOLUTION makes the future of Greece uncertain, but it is not stopping the scientific investigation of her classic past. Excavation of the Agora, market-place of ancient Athens where Socrates once walked and where St. Paul watched the crowds while he meditated how he should introduce the new doctrine he brought with him, goes on steadily.

Digging was begun on Jan. 28 under the direction of Prof. Edward Capps of Princeton University, chairman of

the American School of Classical Studies at Athens, and will be continued until June.

Rivalry Among Athletes

Some of the finds thus far made have a decidedly modern touch. One scrap of pottery, marked with the name of an athlete named Kallias, son of Didymios, hints that even in classic Athens there was jealousy in sporting circles, and that the "big muscle guys" were not above trying to do a rival dirt. For these pottery scraps, called "ostraka" in ancient Greek, were used as ballots in referendum elections when the question of banishing a citizen came up—and banishment was the worst thing that could happen to an Athenian: Socrates chose the deadly hemlock instead. Kallias piled up such a record at the Olympic Games of 472 B. C. that a monument was erected to him. It is conjectured that jealous rivals tried to have him chased out of town afterwards.

A quite different kind of inscription was found near the site of the Library of Trajan. It reads: "No book shall be taken out of the library. It will be open from the first hour until the sixth." The library trustees thus put it up to Athenians to do their reading in the forenoon.

Four Funeral Urns

The discovery of four funeral urns of the seventh century B. C., close to bedrock and all of a uniform character, is also outstanding among the finds made thus far this season. In the largest of these jars were the bones of a baby, as well as ten small vases of varying patterns. An important inscription on a fragment of pentellic marble was taken from a modern foundation wall, giving in sequence the names of seven archons or rulers.

Excavation of the Agora, located in the heart of the residential section of modern Athens, was begun in 1931, and is under the direction of a committee of eight, headed by Prof. Capps, who was minister to Greece under Woodrow Wilson. Prof. T. Leslie Shear of Princeton University, famous for his excavations at Corinth, is in charge of the actual excavation and the study and interpretation of finds. The area of the section to be excavated this year is approximately two and a half acres.

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A museum of public health is to be opened in Paris.

PHARMACOLOGY

Warns That Aspirin Is Potentially Dangerous

WARNING against the indiscriminate use of acetylsalicylic acid, or aspirin as it is commonly called, was issued by the American Medical Association (*Journal American Medical Association*, March 23).

Aspirin is potentially a dangerous drug, is the verdict of the association's council on pharmacy and chemistry, which investigates new remedies as they come on the market and also the claims made by manufacturers for both new and old remedies.

If aspirin is to be used as a home remedy it should first be prescribed by the family doctor whose knowledge of the individual's personal characteristics can alone make its unqualified use safe and advisable, the medical association says. Both direct and indirect harm can result from its use. The advertising claims of one of the leading manufacturers of aspirin were characterized as misleading.

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ARCHAEOLOGY

Prehistoric Puerto Rico Had "Crab Culture"

PREHISTORIC Indians in Puerto Rico who ate so many crabs that masses of cast-off crab claws are their cultural trade-mark have been discovered by Froelich G. Rainey of the Peabody Museum of Yale University.

The crab eaters are the oldest known inhabitants of the island, Mr. Rainey concludes. Their painted pottery, stone tools, and shell spoons were found buried in masses of crab claws.

In his report of the discovery to the National Academy of Sciences, Mr. Rainey states he found the new type of prehistoric culture while excavating a large kitchen midden near Ponce on the south coast of Puerto Rico. This refuse pile itself was typical of what well known prehistoric Indians of the region threw into their trash. The mound consisted of oyster shells, clam, scallop and snail shells mixed with ashes and charcoal from fires, broken pottery and discarded implements. Trenching beneath this, the archaeologist made his discovery of a new type of pottery, of far better fabrication than the crude ware of the shell-heap people. And with this red and white painted pot-

tery were other clues to a distinctive and older type of life, all mixed in disintegrated crab claws.

"At least two and possibly three cultural horizons can now be defined in Puerto Rico," Mr. Rainey announced. The crab culture was followed by the well known Arawak Indian culture, and that perhaps by a relatively recent phase to which he has discovered several clues. Extensive work in the island's interior, however, will be necessary if this late phase of Puerto Rico's aboriginal history is cleared up.

Mr. Rainey's excavations were part of the Scientific Survey of Puerto Rico organized by the New York Academy of Science. The work was supported by the American Museum of Natural History, Voss Fund, and Peabody Museum of Yale.

Science News Letter, March 30, 1935

CLIMATOLOGY

Dust Storms May Continue Late

See Front Cover

DUST STORMS may continue deeper into the spring, and may blow up even in summer, if the Western drought area continues unwatered. There is a strip of territory, stretching from the western Dakotas southward to the Texas Panhandle, that has been practically without rain for several years. Due partly to this deadly drought, partly to ill-advised plowing up of the age-old grass cover in the war-time wheat-boom days, the soil is all dust, ready for any wind.

The present season—late March and early April—is the normal time for strong wind storms. They have been blowing in the West for ages; and dwellers on the Plains have long since got used to occasional dust storms. The winds are not becoming stronger, the Weather Bureau emphasizes; there is just more dust for them to pick up. It is this overloading of the upper air with fine dust that has made it possible for dust storms to reach the East.

The dust itself is not abnormal, the meteorologists say; only it is so new to Easterners that it gives them the "jitters," while Westerners quite literally grit their teeth and accept it as a commonplace seasonal plague.

The photograph of the dust storm approaching the Lincoln Memorial in Washington, shown on the front cover was taken by John Hugh O'Neill, Science Service photographer.

Science News Letter, March 30, 1935

IN SCIENCE

ORNITHOLOGY

Racketeering Hawk Robs Yellowstone Owl

"MUSCLING in" is not unknown among birds of prey. Ranger-Naturalist H. B. Mills of Yellowstone National Park tells this tale of a hawk, an owl and a mouse:

"The course of the owl over the wet meadow was suddenly cut short by a quick dive into the grass. A marsh hawk, unseen heretofore, came at the owl full speed ahead, knocked it from its position and searched in the grass where the owl had struck. Neither bird caught anything, and in a moment they were both on the wing again.

"The owl, not greatly nonplussed, struck into the grass again in a few minutes. The hawk was again on him, and this time with more success. The owl had caught a meadow mouse, and the hawk ate it for him, or more truly, a part of it, for we frightened him away before he was through."

Science News Letter, March 30, 1935

ENTOMOLOGY

Nicotine Insecticide Applied in Vapor

MAN'S insect enemies have a new horror of war awaiting them, in a nicotine vaporizer invented by three scientists of the University of California Citrus Experiment Station at Riverside, Calif., Dr. Ralph H. Smith, Henry U. Meyer and Charles O. Persing. Instead of applying nicotine sulfate as a spray, in the customary manner, it first atomizes the poison fluid and then applies heat to evaporate it. (*Science*, March 22)

The deadly vapor is conducted directly into the foliage of insect-afflicted plants, where it proves to be much more efficient than the nicotine sprays at present in common use. If desired, the heat can be left out, and the nicotine mixture applied in the atomized form.

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FIELDS

ASTRONAUTICS

Stratosphere Balloon Now Under Construction

CONSTRUCTION of the new Soviet stratosphere balloon "Osoviakhim-2" is progressing rapidly. While its crew of three men are yet unnamed, plans call for a period of parachute jumping for the fortunate appointees as training for the flight.

The gondola of the balloon is being made from rustproof steel with welded joints. The gas bag will be fabricated from high grade rubberized muslin sewn together.

The crew of three will consist of a commander, in charge of ground operations and gondola discipline; a pilot for navigating the balloon; and a scientist for taking observations and operation of scientific instruments.

Science News Letter, March 30, 1935

FORESTRY

Britain Has Problem Of Vanishing Trees

BRITAIN, no less than America, is faced with the problem of tree destruction, without sufficient replantings to offset it. The problem is the more severe there, in that the limited area of the islands does not afford any great but remote reservoirs of primeval forest to be tapped at the expense of a long haul when the forests closer to market have been wiped out, as has been the case on this continent.

In the British science journal, *Nature*, (Feb. 9) the seriousness of the situation is commented upon editorially, and also in a communication from Alexander L. Howard, of London. One important factor that has accelerated the destruction of British woodlands is the post-war economic pressure that has resulted in the break-up of many of the large landed estates, and in the relative impoverishment of many of those still left intact. The magnificent hardwood growths that have been the glory of rural England are being turned into cash-yielding lumber as fast as possible.

Replanting is either neglected wholly or carried on with faster-growing softwood species that promise returns within a human lifetime but are not so valuable, tree for tree, as the beech, ash, walnut and other types they replace.

Mr. Howard states that he first began to call attention to this menace to Britain's famous and beautiful hardwood forests ten years ago. So far, however, he seems to have been as one crying in a vanishing wilderness, for the cutting still goes on.

A similar situation obtained in the Irish Free State until 1928, when a new Forestry Act imposed such drastic restrictions that now a landowner is not permitted to cut down a tree on his own land without official permit. It is granted, Mr. Howard states, only with the stipulation that replacement plantings be made at once.

Commenting editorially, *Nature* remarks, "In Great Britain similar restrictions, however well-meaning, might prove difficult and costly to apply in practice; better results would probably be achieved, at less cost, by a policy which would give landowners more encouragement to maintain the beauty of their estates as their forebears did . . . There is great need for educating the British public to respect trees and woodlands, which suffer from acts of vandalism unheard of in those European countries in which the 'tree sense' or 'forest conscience' is more fully developed."

Science News Letter, March 30, 1935

PHYSIOLOGY

Hard-of-Hearing Can Enjoy Talkies

MANY hard-of-hearing persons to whom the cinema was a great boon in the days of silent pictures will be able to enjoy the talkies in a new Chicago theater.

Every seat in this theater will be equipped with a hearing device which is said to enable the majority of the deafened to "hear through their bones." It is not an ear-phone but an object the size of a domino attached to a lorgnette handle. Held against any bone of face or head, it transmits sound waves or vibrations along the bones instead of the usual channels.

Because every seat will have one of these devices, there will be no segregation of the hard-of-hearing from patrons who have sound hearing.

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ASTRONOMY

Will Wager Sun Shines For Billion Years More

HOW long will the sun keep on shining in the sky? Dr. Donald H. Menzel of Harvard College Observatory is willing to wager \$10,000 against one cent of anyone's money that it will shine for another billion years—if he can hold the stakes!

Describing the durability of the sun, Dr. Menzel pointed out it should last for five hundred sextillion years (5, with 23 ciphers after it) but that there is a chance it will explode within the lifetime of men on earth. He added:

"So confident am I that the sun will continue to shine with sufficient stability to support life for at least a billion years, that I am willing to wager on it—and give reasonable odds—say one cent to ten thousand dollars. If you want me to increase the time to ten billion years, the odds will have to be lower. The only condition to the wager is that I be allowed to hold the stakes."

Discussing the temperatures of the sun's surface, Dr. Menzel said that while the sun appears to be on fire it is not burning in the ordinary sense.

"The sun," he declared, "is too hot to burn. If we could convey to the sun great quantities of the ordinary products of combustion: carbon dioxide, smoke and water vapor we should see these materials 'unburn' before our eyes. The carbon dioxide would break up into gaseous carbon and gaseous oxygen. Then, if we could separate these two substances, and transport them back to earth, we should be able to heat our houses next winter with the coal we burned last winter!"

All the materials found in the sun's vaporous atmosphere exist as separate elements. It is too hot for them to form compounds. So large is the sun, also, that the quantity of the various elements merely in its atmosphere are enormous.

"If the silver just of the solar atmosphere," said Dr. Menzel illustrating his point, "could be extracted and brought back to earth, rare as that element is, it would form a ball more than a quarter of a mile in diameter. It would weigh almost a billion tons and its value would be inconceivable."

Dr. Menzel reported these solar facts in an address for Science Service over a nation-wide hook-up of the Columbia Broadcasting System.

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ASTRONOMY

Three Planets

Venus, Mars and Jupiter, All Visible in Evening Skies, Rouse Speculation on Life on These Neighbors

By JAMES STOKLEY

THE brightest object in the April evening sky can be observed near the horizon, a little north of the west point, for about three hours after sunset. This is the planet Venus, which is drawing away from the sun and during the next few months will become more and more prominent. Farther south, higher than Venus, is the star Aldebaran, considerably fainter, which marks the eye of Taurus, the bull. Still farther south, and higher, is Betelgeuse, the uppermost star in Orion. The three stars forming the belt of this heavenly warrior are below. Still lower, where it sets at just about the time for which the maps are drawn, is Rigel.

The maps show the skies as seen at 10 p. m., April 1; 9 p. m., April 15; and 8 p. m., April 30.

Low in the southwest is Sirius, less brilliant than the planet Venus, but brightest of the stars. This star is in Canis Major, the greater dog. Above is Procyon, part of Canis Minor. About half way from the horizon to the zenith, in the west, is the constellation of Gemini, the twins, with the two stars Castor and Pollux. The latter, the brighter, is to the south. In the northwest Capella, in Auriga, the charioteer, shines brilliantly.

Steady Red Light

Directly south is Leo, the lion, which can be recognized from the familiar sickle, which has the bright Regulus at the end of its handle, hanging downwards. Towards the southeast, in the constellation of Virgo, is a red object, with a steady light that betrays it as a planet, Mars. Spica, the brightest star in the same constellation, is below and to the left. Low in the southeast, in the next-door constellation of Libra, the scales, is the planet Jupiter, even brighter than Mars, though not as brilliant as Venus.

Thus, three of the five naked eye planets are now visible in the evening sky at once. Saturn is in the constella-

tion of Aquarius, and rises in the east about 4:00 a. m., an hour and a half before sunrise. This is just about the time of the beginning of morning twilight, and so by the time the planet would be high enough the sky will be too bright to permit it to be seen. Mercury is still close to the sun and quite invisible this month.

High in the north is the familiar great dipper, part of Ursa Major, the great bear. If you follow the direction of the curve of the dipper's handle to the east, you will come to the bright star Arcturus, in Bootes. Low in the northeast is Vega, in the lyre, Lyra.

Are They Inhabited?

With Venus, Mars and Jupiter all visible in the evening sky together, our attention again turns to these members of the earth's family of bodies revolving around the sun, forming the solar system, and especially to the perennial problem of whether the earth is the only one inhabited. Without an atmosphere similar to ours and without temperatures such as those on the earth, life as we know it could not exist. The phrase, "as we know it," should be emphasized, however, for it is conceivable, perhaps, that some other sort of life

might exist under radically different conditions that would be fatal for earth-dwellers.

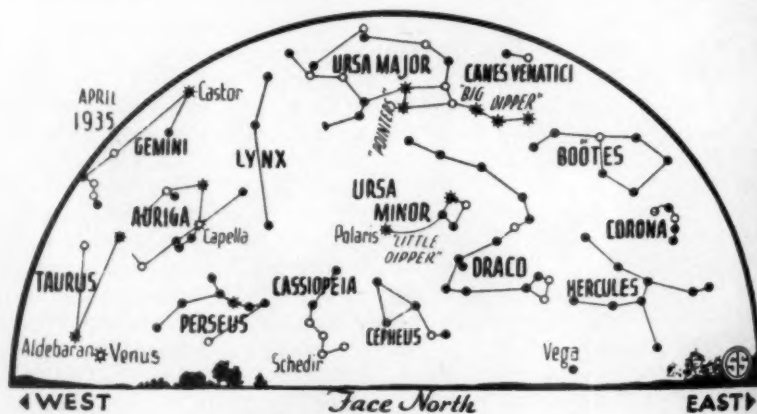
In recent years the study of the atmospheres of the planets has made great advances, which were summarized in an address by Prof. Henry Norris Russell of Princeton University at the last meeting of the American Association for the Advancement of Science. The spectroscope is responsible for these advances because different gases in the atmospheres of the planets absorb different colors, or wavelengths.

Lines Show the Elements

When light from an incandescent source passes through the prisms of a spectroscope, a continuous band of color is formed, red at one end, violet at the other. The spectrum of the sun's light is crossed by innumerable dark narrow lines, each due to the presence of some element in the sun's outer layers, which removes certain colors from the light shining through them.

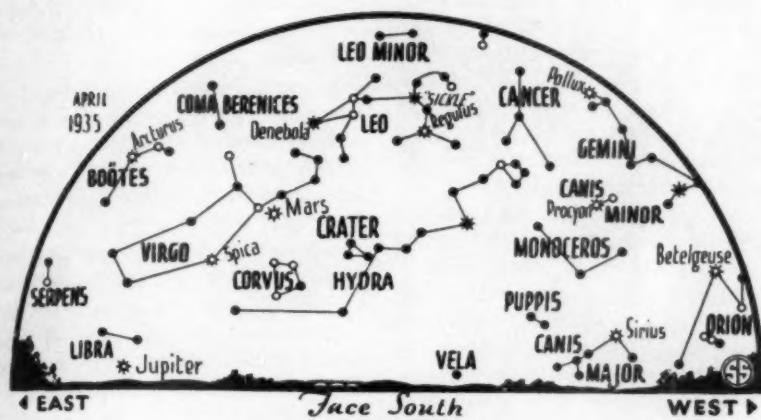
In addition other dark markings cross the spectrum of the sun. These are wider bands, which vary from time to time, depending on weather conditions or on the sun's height in the sky, which determines the thickness of our atmosphere through which its light has to pass. These bands, therefore, are ascribed with certainty to some of the gases in the earth's atmosphere, particularly oxygen and water vapor.

☼ * * • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS



BRIGHTEST IN THE SKY

For about three hours after sunset you may watch the beautiful planet Venus in the western sky of April.



MARS AND JUPITER

With a steady red light shines the planet named for the god of war. Below it and farther east is the brighter Jupiter.

When we look at Mars, for instance, the light that reaches us has passed through both the atmosphere of the earth and that of the planet. Some of the bands that appear in the spectrum of its light are therefore caused by our own atmosphere, and some by that of Mars.

The problem is to sort them out. This can be done by comparing the spectrum of the planet with that of the moon which is known, on entirely independent evidence, to be completely devoid of any layer of air.

At Same Height

In taking such spectra for comparison purposes, the planet and the moon must be at the same height in the sky, in order that the light of each will pass through the same thickness of terrestrial air. If the bands are then found to be stronger in the planetary spectrum than in that from the moon, it would indicate the presence of that particular gas in the planet's atmosphere. Forty years ago Dr. W. W. Campbell, of the Lick Observatory, used this method, and found no appreciable difference between the strength of the lines in the spectra of Venus and Mars, and that of the moon. This experiment indicated that the atmospheres of these planets certainly did not contain a quarter as much oxygen and water vapor as are in the earth's.

In recent years a more delicate method of sorting the two groups of bands has been used. This depends on the Doppler effect, the same thing that makes the pitch of a fire engine bell sound higher when approaching you than when going away. When the bell comes towards you the sound waves are

squeezed together, they enter the ear at small intervals and give the effect of a higher pitched sound. But when leaving, the waves are spread out, the pitch is lower.

Exactly the same effect is observed with light. When light reaches the earth from a star or planet that is approaching us, the light waves are squeezed together and the wavelength, corresponding to pitch, is reduced. This produces a shift of the lines in the spectrum towards the violet end. If the star is receding, the shift is towards the red.

If the speed with which the earth and Mars are separating, or coming together, were great enough, the two sets of bands would be entirely separated, and then it would be easy to distinguish one from the other. With less speed, the bands would merely be widened. At the Mt. Wilson Observatory in California, several astronomers have been working on this problem with the world's largest telescope and a very powerful spectroscope used with it.

No Oxygen

No oxygen has been detected in the light of Venus and Mars, though it is estimated that one thousandth as much as is on the earth would have produced a noticeable effect. The test for water vapor is not so delicate, but it is certain that there is very little on either planet.

In his address Dr. Russell pointed out, however, that certainly some water vapor must be present in the atmosphere of Mars, because observations of the heat show that every day at noon on the Martian equator the temperature rises above freezing, and even at the poles it reaches that point in midsum-

mer. Consequently, the white areas that we can see around the pole of Mars, which form during the winter and disappear in their summer, must be snow, and must evaporate when they disappear. They are probably very thin, perhaps not more than a few inches deep, and they would account for only a minute amount of water vapor, too small to be detected.

But the case for life on Mars is not entirely hopeless. There are green areas on Mars which appear and disappear with the coming of spring, summer and autumn, and these seem very likely to be vegetation. Vegetable life might well adapt itself to the conditions on the planet. Dr. Russell points out that a race with no more intelligence than our own could probably have worked out means of living on oxygen obtained electrically from water. Whether this has been done on Mars, however, is pure speculation, and the astronomer does not concern himself with a problem of this kind.

The moon is new on the third, at first quarter on the tenth, full on the eighteenth and at last quarter on the twenty-fifth, so that it will be seen during the evening from about the sixth to the twentieth. At 3:12 p. m., E. S. T., on the first, it will be at perigee, or closest to the earth, 224,400 miles away. On the thirteenth, at 7:48 p. m., it is farthest, at apogee, at a distance of 251,700 miles, but on the twenty-ninth, at 11:00 a. m., it is again at perigee with 227,550 miles separating us.

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PSYCHIATRY

Conscience, Immortality Disputed in England

THE English are having their own Battle of Dayton.

Instead, however, of fighting over whether man is descended from monkeys, the compatriots of evolutionist Darwin are waging a religious controversy over such matters as the voice of conscience, belief in the soul and hope of immortality.

Instead of being fought in a court of law as was the famous Tennessee battle, the English version of the Battle of Dayton is being fought in that truly English court of public opinion, the London Times.

The shot that started the London battle was fired by Dr. David Forsyth, president of the section of psychiatry of the Royal Society of Medicine, when he

declared in his presidential address that science and religion are "more incompatible than ever," when viewed from the standpoint of modern psychology.

Vehement protests from fellow physicians and religious leaders immediately followed.

Charges and counter-charges in the theological battle are reviewed for the benefit of American physicians by the London correspondent of the *Journal of the American Medical Association* (March 9).

Dr. Forsyth declared in his address that the mysterious business of gods and spirits is an example on a colossal scale of a hang-over of childish thinking. Religious thinking is "pleasure thinking, not reality thinking," in his terms. Christianity, he charges, is often cruel and sadistic: in other aspects it manifests a perverted enjoyment of being cruelly treated.

The "voice of conscience," according to this prominent psychologist, is merely the voice of the father remembered

from childhood. The sense of guilt, which begins to be felt around the age of seven, is always a conflict between the child's inclinations and the parents' wishes. Belief in a soul and the hope of immortality have simply been taken over by Christianity from primitive religions, and science has failed to discover a foundation for belief in the supernatural which Dr. Forsyth declares is the chief characteristic of religion.

Six medical psychologists and several other physicians have publicly disputed Dr. Forsyth. More largely than any other department of medicine, psychology rests on theory and speculation, they say. They deny his charges of sadism and masochism in Christianity—sexual perversions leading to cruelty and enjoyment of being cruelly treated.

The dean of St. Paul's, Dr. Mathews, also replied to Dr. Forsyth, admitting his argument that fantasy plays a part in some religious experience, but declaring that this is an aberration of religion.

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opinion that the sex gland product may in certain circumstances produce cancerous tissue.

Here is another new-found link: Breathing carbon monoxide in certain concentrations make mice sterile; in the same concentration, the gas slows the rate of growth of two kinds of cancer in mice.

What it all means and whether the links can be forged into armor strong enough to protect humanity against the dread foe, cancer, cannot yet be told, but these discoveries may well be the first links for such a coat of mail.

Science News Letter, March 30, 1935

ETHNOLOGY

"Wandering Gypsies" Becoming Stay-At-Homes

THE life of the wandering gypsy has been described by the story-writers as carefree, picturesque and highly attractive, although actual contact with a tribe quickly rubs off the glamour. It is only between the pages of a book or on the screen that a Lady Babbie is to be found.

Now science tells us that the gypsy tendency to wandering about the countryside, romantic or shiftless according to how you look at it, is not really the inherent characteristic of gypsies that fiction writers would have us believe. Three-fourths of the gypsies would not be gypsies if they had been trained to be anything else, although here, as in most cases, the training to be successful must start early.

This statement may be too optimistic but it is suggested by a study of the gypsy situation in Norway which has been reported by a Norwegian physician, Dr. E. Gisholt, who has been medical officer to one of the homes for children organized by the Gypsy Mis-

MEDICINE

Cancer Now Linked To Beginning of Life

CANCER brings to most minds a picture of suffering and death. Far different are the thoughts associated with the process that starts life, so that it is very strange to find the two processes—one so gloomy and the other so bright—linked together. But scientists are finding more and more links between them.

The latest discovery suggests that a product of the female sex glands may directly or indirectly produce in the body natural resistance to cancer. This does not mean that the gland product can be used as a remedy or preventive of cancer. The discovery of its possible role in prevention was made on animals and so far there is no human application. But the possibility of the gland product playing a part in building up resistance to cancer finds support from experience with human cases.

If this sex gland product or hormone is in some way responsible for natural resistance or immunity to cancer, one would expect the disease to occur most often when production of the sex hormone ceases, Dr. J. Argyle

Campbell of the National Institute for Medical Research, London, points out (*Nature*.) This is the case at any rate in women, since cancer is most prevalent in the age period after sexual activity has ceased.

The idea that the sex gland product is a factor in the development of natural immunity to cancer arose when Dr. J. B. Murphy of the Rockefeller Institute found that the embryonic skin of mice is equally with placental tissue the most powerful agent in making mice immune or resistant to tumors. It is possible that this skin which covers the mouse before birth manufactures "immune bodies"—substances which give the body power to resist disease—as the result of sex hormone and uterine activity, Dr. Campbell says.

Another interesting link between cancer and the reproductive process is the discovery of British scientists, Prof. E. C. Dodds and J. W. Cook, that this female sex gland product is chemically related to a cancer-producing substance derived from coal tar.

Other experiments have led to the

● RADIO

Tuesday, April 2, 4:30 p. m.

WHAT IS BELOW GROUND? by Dr. Charles Thom, Principal Mycologist of the Bureau of Plant Industry, U. S. Department of Agriculture.

Tuesday, April 9, 4:30 p. m.

THE MINOR PLANETS: STRAY SHEEP OF THE SOLAR SYSTEM, by Dr. A. O. Leuschner, Professor of Astronomy, University of California.

In the Science Service series of radio addresses given by eminent scientists over the Columbia Broadcasting System.

CHEMISTRY

Active Principle of Ergot, Childbirth Aid, Isolated

THE ACTIVE principle of ergot, a drug once widely used in childbirth, has been isolated by H. W. Dudley, biochemist of the Medical Research Council, and Dr. Chassar Moir, London University gynecologist.

Scientists have long sought to find the substance in ergot which is responsible for its effect on the uterus. The success in this search, just reported by Dr. Moir and Mr. Dudley to the *British Medical Journal*, marks the culmination of a three-year alliance of chemistry and clinical medicine.

Ergometrine is the name of the newly-isolated substance. When given by mouth, it produces strong contractions of the uterus after eight minutes. Hypodermic injections start the contractions in four minutes, on the average.

An Alkaloid

Ergometrine belongs to the class of drugs known as alkaloids. It differs markedly from and is probably simpler than other alkaloids isolated from ergot which were thought previously to

be responsible for the drug's action on the childbearing organ. These are now finally proved not to be responsible for the drug's action.

The results obtained by the English scientists are said to be in accord with the findings of an American scientist, Dr. A. K. Koff of Johns Hopkins Medical School.

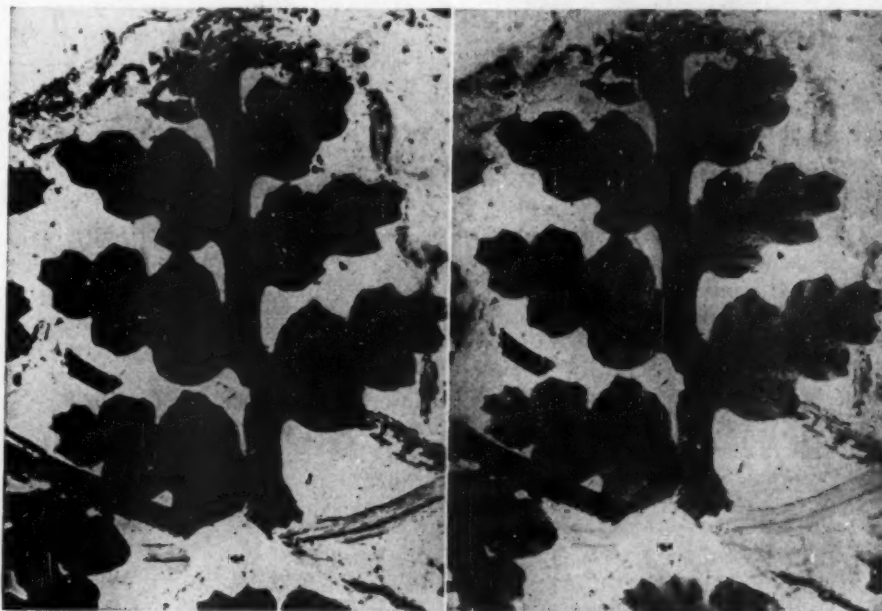
Science News Letter, March 30, 1935

ENTOMOLOGY

Chinch Bug Menace Unabated by Winter

CHINCH bugs in the grain belt states have overwintered successfully—from their own point of view. Field investigators of the bureau of entomology, U. S. Department of Agriculture, have found that winter weather has reduced their ranks by only about ten per cent., which makes no difference at all, practically speaking. Heavy infestation must therefore be expected during the coming summer.

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DARK IN THE LIGHT: MADE VISIBLE IN DARKNESS

Fine details of structure, hidden in photomicrographic studies of coal plants taken by ordinary light (left) stand out clearly when invisible infra-red radiation is seen through them into the camera. Photos by Prof. John Walton, Glasgow University. (See *Nature*, Feb. 16; *SNL*, March 16, p. 172)

sion in Norway. (*Lancet*, Dec. 29, 1934).

Gipsy children over four years old are rarely admitted to the homes and the extreme age limit is six. The children live in these homes until they are eleven or twelve years old, enjoying the benefits of a religious education and physically and psychically sound surroundings. About 75 per cent. of them become self-supporting without adopting the vagrant life of their parents.

The traditional mental superiority of gipsies was disproved by intelligence tests of these children. "A certain low-grade nimbleness of wit" is all they have as a class.

The outdoor life of a gipsy child does not contribute as much to his health as might have been expected. Instead of being rare, rickets was found in a third of the children examined. This is attributed to the faulty diet the children have been fed and to their being kept in the sunless, airless cabins of gipsy boats.

Although Norwegian authorities have had trouble with gipsies since far back in European history, the signs point to a future without gipsies in that country.

In the nineties of the last century there were some four thousand gipsies in Norway, according to reports, but in 1927 there were only about half that many and at present only 1,800 are found living as gipsies. Norwegian gipsies are apparently becoming stay-at-homes and will probably soon be absorbed by the rest of the population.

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GEOLOGY

Central American Quake Centered on Sea Bottom

THE EARTHQUAKE reported from several American seismograph stations on Monday, March 18, really occurred on St. Patrick's Day—though not in any Hibernian part of the world.

Its epicenter was traced to a spot on the bottom of the sea, south of Antigua, Guatemala, by scientists of the Jesuit Seismological Association, St. Louis, after studying wire reports relayed from Science Service, Washington, D. C. The time of origin was about 4:32 p. m., Eastern Standard Time, on Sunday, March 17.

Stations reporting the quake were those of Georgetown University, Washington, D. C., Canisius College, Buffalo, N. Y., and St. Louis University.

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•First Glances at New Books

Additional Review
On Page 207

Zoology—Geography

THE BOOK OF ZOÖGRAPHY—Raymond L. Ditmars. Illustrated by Helene Carter—*Lippincott*, 64 p., \$2. One of the most cleverly conceived and charmingly executed ideas yet, in zoology books for younger readers. The illustrations are superimposed in their appropriate places on full-page colored maps—sometimes with an extension of the Equator to make room for all the monkeys; the text, of course, like any Ditmars text, needs no blurb. Finest kind of a present for higher-I. Q. youngsters.

Science News Letter, March 30, 1935

Mental Hygiene

PSYCHOLOGY AND HEALTH—H. Banister—*Macmillan*, 256 p., \$2.50. Written to give medical students and the general practitioner an idea of "the workings of the human mind and how they affect the body and behavior," this book is sufficiently simple and non-technical to be useful to social workers, nurses and parents.

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Pharmacology

THE PHYSICK GARDEN—Edith Grey Wheelright—*Houghton*, 288 p., \$3. The author gives an interesting account of the medical use man has made of plants from the early days of prehistory down to the modern days of vitamins. The book is well illustrated and will appeal to the amateur gardener as well as to students of history, medicine and pharmacy.

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Paleobotany

**LES MÉGASPORES DU BASSIN HOUIL-
LIER POLONAISE: Ière Partie**—Jan Zerndt—*Académie Polonaise des Sciences et des Lettres, Kraków*, 55 p., 32 plates, 14 figures, 21 tables; Procurable from the *Académie, Kraków, Poland*. An elaborate quantitative study of pteridophyte megaspores found in a number of Polish mines and test borings. Of interest primarily to paleobotanists.

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Forestry—Reclamation

THE RECLAMATION OF THE EVERGLADES WITH TREES—John C. Gifford—*Books, Inc.*; May be secured from *University of Miami, Fla.*, 89 p., 50c. The author, who has already expressed in other publications his original and

emphatic views on untried possibilities of tropical agriculture and silviculture in Florida, has equally bold proposals for the utilization of the wide grassy Everglades. Cocopalm, pencil cedar, various tree species yielding rubber, tropical fruits and nuts, are among the things he would like to see tried.

Science News Letter, March 30, 1935

Anthropology

ENVIRONMENT AND GROWTH—Barkev S. Sanders—*Warwick and York*, 375 p., \$4.12. Much too deep for lay reading, although the subject matter, bearing on the old question of heredity vs. environment, is always interesting, this monograph will be both interesting and valuable to scientists studying the problem, whether from the standpoint of child development, sociology or anthropology.

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Geology

WHEN COAL WAS FORMED—Prepared and published by the *Museum of Science and Industry*, chart, 17x30 inches, 15c. A graphic chart of the geologic ages, giving timescales from Archeozoic to Present, and showing the relative developments of various plant orders at various periods of coal formation.

Science News Letter, March 30, 1935

Geography

PHYSIOGRAPHIC DIAGRAM OF SOUTH AMERICA—Guy-Harold Smith—*Geographical Press, Columbia University*, Text, diagram and exercises, 35c each, or 25c. each for ten or more. Other diagrams and charts for continents, states, etc., at various prices. A new type of map for university courses in geography, geology, etc. The continent is mapped in outline, with physiographic features well represented; place names, which often over-burden maps, are printed separately on an overlay sheet. A considerable body of text is printed on the back of the chart and on an accompanying sheet.

Science News Letter, March 30, 1935

Mathematical Physics

MATHEMATICAL PROBLEMS OF RADIATIVE EQUILIBRIUM—Eberhard Hopf—*Cambridge University Press*, 104 p., \$2.10.

Science News Letter, March 30, 1935

Eugenics

VOLUNTARY STERILIZATION—C. P. Blacker—*Oxford*, 145 p., \$1.75. The author of this book is general secretary of the Eugenics Society in England, which for four years has been urging "that sterilization be legalized for persons likely to transmit serious mental or physical defects to posterity." The book also is a plea for legalization of sterilization.

Science News Letter, March 30, 1935

Zoology

HOMES AND HABITS OF WILD ANIMALS—Karl Patterson Schmidt; Illustrated by Walter Alois Weber—*M. A. Donohue & Co.*, 64 p., \$1.50. Real animal lives, simply told for younger readers, yet without a trace of the too-frequent condescension which intelligent children quickly detect and resent. The vivid narrative is enlivened with lively line drawings on the page margins, and interspersed with really beautiful color plates. Fortunate the boy or girl who gets this natural-history book for a present!

Science News Letter, March 30, 1935

Botany

OUR AMERICAN MAPLES AND SOME OTHERS—Margaret Curtin Finlay—*Pub. by Author, Allenhurst, N. J.*, 19 p., 43 plates, \$3. The maple is one of the "homiest" of trees, humming with bees in spring, giving dense shade in summer, gorgeously colored in the fall. Deservedly, it has many lovers. Here, one of them tells briefly but appreciatively about all our native and some introduced species, with fine, clear photographic illustrations and workable identification "keys."

Science News Letter, March 30, 1935

Agricultural Economics

A PROGRAM FOR LAND USE IN NORTHERN MINNESOTA—Oscar B. Jesness and Reynolds I. Nowell—*Univ. of Minnesota*, 338 p., \$2.50. This book is a type study in land utilization by the University of Minnesota and the U. S. Department of Agriculture. It takes one of the most difficult of marginal or barely super-marginal farm areas in this country, analyzes it carefully both agronomically and economically, and tries to reach a practicable decision on what to do about it.

Science News Letter, March 30, 1935

EVOLUTION

NATURE RAMBLINGS

by Frank Thone



Admirals Wearing Spurs

HOW MANY things survive past any imaginable usefulness!

We are accustomed of course, to having evolutionary tag-ends about ourselves pointed out to us: the vermiform appendix, useful to no one except surgeons; the tonsils, accused of the same class favoritism; even our little toes under suspicion.

Less known, but evolutionally just as anachronistic, are the valves in the veins that run parallel to our ribs. Such valves are useful to prevent back-flow of the blood, in quadrupeds whose ribs are normally more or less vertical; but our ribs and their veins are now approximately horizontal, so that the valves serve no known use.

Such useless or seemingly useless structures may rouse our wonder and speculation; but after all there is nothing we can do about them. They are bone of our bone, and flesh of our flesh. So unless they get into mischief, as the appendix sometimes does, about all we can do is let them alone and ignore them so far as possible.

But what shall we say of our conduct, as allegedly rational beings, when we preserve, for years or generations, objects or ways of procedure that once possibly had uses of their own but now are quite obsolete?

The familiar buttons on the back of a man's coat-cuffs at once recur. Supposedly put on the front of soldiers' cuffs to keep them from untidily wiping their noses on their uniforms, these buttons have somehow slipped round to the back, and there they survive, decade after decade, profiting button-makers and tailors, and no one else.

The Sam Browne belt, a World War invention, has already begun to slip into this category of more or less useless survivals. The diagonal strap over

the shoulder was a mighty fine practical thing for the war-time officer, helping to distribute better the weight of pistol, ammunition and other necessary objects he had to hang on his belt. But now, belts of the Sam Browne type, carrying no load at all, are worn by everybody from bus drivers to volunteer schoolboy traffic cops.

Similarly, spurs are a part of the field artilleryman's uniform, even in motorized outfits. During the War, new-fledged young cockerels of the air service, regarding their dashing selves as the natural successors of the scouting light cavalry, for a time wore spurs—until it got too much for their graver senior officers and they had to take them off.

It is even alleged that certain stout admirals of the Navy, with desk jobs in Washington, used to wear spurs—to keep their heels from slipping out of the inkwells. One spur would always be blue-black, one always red.

But this is probably an exaggeration.

Science News Letter, March 30, 1935

ARCHAEOLOGY

Have Found Over 1,000 Weapons of First Hunters

TAKING stock of the trophies that science can now show from its long, persistent search for the earliest inhabitants of America, Jack Cotter, graduate student of the University of Denver, reports that well over a thousand weapons of the earliest known Americans have been recovered. Recent discoveries bring the total of stone weapons up to 1,149, Mr. Cotter figures.

Ancient big game hunters, who pursued great bison and other animals long extinct, have been trailed by their stone handiwork through the greater part of the United States. The familiar small clues to their presence are pointed tips of stone of characteristic patterns which they bound to their darts and hurled at animals or at their enemies.

These dart points, known scientifically as Folsom and Yuma types, have been found in greatest profusion in Colorado, Mr. Cotter reports. Out of a total of 295 Folsom points, 189 are from Colorado; and of 854 Yuma points, 647 are from this state.

From reports of responsible scientists, says Mr. Cotter, Folsom weapon points have been found as far spread in the East as New Hampshire, Pennsylvania, West Virginia, North Carolina, Georgia, Alabama, and Mississippi.

Science News Letter, March 30, 1935



"No summary with which this reviewer is familiar approaches Professor Millikan's in comprehensiveness and clarity."—says Waldemar Kaempffert in the *Times Book Review*, of the new book by

ROBERT A. MILLIKAN

"A succinct and logical presentation of what has happened to the familiar cosmos since Thomson, Einstein, Rutherford and Millikan himself made it necessary to change our conception of the universe and matter completely . . . No advanced student of physics can afford to be without it."

And the *Scientific Book Club Review* says " . . . the style betrays the enthusiasm of the scientific warrior. The reader feels his joy in overwhelming an opponent, his triumphs in winning a point in priority, and his loyalty and pride in the work of his institute. This makes the book dramatic, readable and interesting, especially as the story is woven around some of the great developments of physics in the last twenty-five years."

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Additional Reviews
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Philosophy

THE PHILOSOPHY OF A BIOLOGIST—J. S. Haldane—*Oxford*, 155 p., \$2.50. Prof. Haldane meets the old charge of materialism, leveled against science by some religious teachers, with a disconcerting *in quoque*: "There is no reason to suppose that Christianity will not continue to survive. It seems evident, however, that in order to survive and develop it must harmonize itself with the development of culture in other directions. That it is doing so is evident enough; but the main hindrance is, it appears to me, the materialism which prevails in the ordinary present-day interpretation of our universe, and which penetrates Christian theology. Christianity must rid itself of materialism and be ready to cope with materialism and any other forms of anti-religious ideas, if it is to survive and at the same time retain or regain the adherence of a large part of the educated classes."

Science News Letter, March 30, 1935

General Science

YEAR BOOK NO. 33—*Carnegie Institution of Washington*, 405 p., \$1., paper, \$1.50, cloth. The record of another year's progress in science by one of the leading American research institutions.

Science News Letter, March 30, 1935

Immunology

BLOOD GROUPS AND BLOOD TRANSFUSIONS—Alexander S. Wiener—*Charles C. Thomas*, 220 p., \$4. While this book is too technical for the average lay reader, it should be useful to the busy general practitioner and other scientists desiring a clear and concise presentation of the facts. The chapter on medicolegal applications is particularly lucid and should be helpful to lawyers as well as medical men.

Science News Letter, March 30, 1935

Physiology

PHYSICAL DEFECTS, THE PATHWAY TO CORRECTION—*American Child Health Assn.*, 171 p., Paper, \$1., Cloth, \$1.25. This is the report of a two-year investigation into the reasons why physical defects or health handicaps in school children remain uncorrected. Although the investigation was limited to New York City schools, the findings are applicable to other school systems, particularly in large cities. The weaknesses

in the school health service are clearly summarized and measures for improving the situation are recommended. The study reported here should prove a big contribution to child health throughout the country.

Science News Letter, March 30, 1935

Ichthyology

TROPICAL FISHES FOR THE HOME; THEIR CARE AND PROPAGATION—F. H. Stoye—*Carl Mertens*, 284 p., 167 plates, \$4. Second edition, revised and enlarged, with added illustrations, of one of the most complete books on these beautiful and interesting pets, whose culture has assumed almost the proportions of a cult.

Science News Letter, March 30, 1935

Paleobotany

STARUNIA—B. Szafran and others—*Académie Polonaise des Sciences et des Lettres, Kraków*—5 parts, Procurable from the *Académie, Kraków, Poland*. Accounts of mosses, insects and mammals found associated with the remarkable woolly rhinoceros discovered a few years ago in Poland.

Science News Letter, March 30, 1935

Botany

FERNS OF NORTH CAROLINA—H. L. Blomquist—*Duke Univ. Press*, 131 p., \$2. Concise descriptions, with habitat notes, illustrated with clean-cut line drawings and good photographs, make this book on the pteridophyta of one state an excellent mark for writing botanists in other commonwealths to shoot at. The country needs more local and regional floras like this.

Science News Letter, March 30, 1935

Physical Education

ACHIEVEMENT SCALES IN PHYSICAL EDUCATION ACTIVITIES—N. P. Neilson and Frederick W. Cozens—*Barnes*, 171 p., \$1.60. Gives teachers of physical education in grade and junior high schools a method of testing their pupils' progress. Some 79,000 children were tested in the course of developing the scales to their present form.

Science News Letter, March 30, 1935

History of Science

COSMOGONIES OF OUR FATHERS—Katherine Brownell Collier—*Columbia Univ. Press*, 500 p., \$5. A record of some of the cosmic systems devised by men in early modern times, well documented and sympathetically commented upon. A survey of the ideas about the universe here brought together impresses one with both the ingenuity and the sincerity of our forebears, in their synthesis of faulty and insufficient data, especially in view of their need to reconcile it with contemporary theological and philosophical prepossessions.

Science News Letter, March 30, 1935

Biology

THE STRUGGLE FOR EXISTENCE—G. F. Gause—*Williams and Wilkins*, 163 p., \$3.00. One of the leaders among the younger group of Russian biologists attacks the question of natural selection, which has been rather baffling to field naturalists since Darwin, under laboratory conditions with statistical methods, after the manner of Raymond Pearl in this country. Dr. Pearl contributes a foreword.

Science News Letter, March 30, 1935

National Parks

GENERAL REPORT, RAINBOW BRIDGE—MONUMENT VALLEY EXPEDITION OF 1933—Ansel Franklin Hall—*Univ. of Calif. Press*, 32 p., 50c. The record of a thorough-going reconnaissance of one of the most interesting of the Southwestern scenic areas of apparent National Park value. The report covers briefly the fields of engineering, aerial reconnaissance, geology and paleontology, archaeology, ethnology, and the life sciences.

Science News Letter, March 30, 1935

Archaeology

REPORT ON ARCHAEOLOGICAL RECONNAISSANCE IN THE RAINBOW PLATEAU AREA OF NORTHERN ARIZONA AND SOUTHERN UTAH—Lyndon Lane Hargrave—*Univ. of Calif. Press*, 56 p., 60c. A detailed report, well illustrated by the archaeologist of the expedition.

Science News Letter, March 30, 1935

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